



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/804,183	03/19/2004	Yuji Akishiba	0073/016001	6774

22893 7590 01/04/2007
SMITH PATENT OFFICE
1901 PENNSYLVANIA AVENUE N W
SUITE 901
WASHINGTON, DC 20006

EXAMINER

AKANBI, ISIAKA O

ART UNIT	PAPER NUMBER
----------	--------------

2877

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/04/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/804,183

Applicant(s)

AKISHIBA, YUJI

Examiner

Isiaka O. Akanbi

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 1-5, 7 and 20 is/are allowed.
- 6) ☒ Claim(s) 8-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 07 August 2006.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Amendment

The amendment file 10 October 2006 has been entered into this application. Claim 6 is cancelled.

Information Disclosure Statement

The information disclosure statement file 07 August 2006 has been entered and reference considered by the examiner.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8-15 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zandoni (3,847,485) in view of Boettner et al. (5,880,465)

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over of Zandoni in view of Boettner. The reference of Zandoni teaches of a displacement gauge comprising of a light emitting portion (4) for emitting light to be projected onto a measurement subject, an objective lens (11) for receiving light emitted from said light emitting portion and projecting light onto said measurement subject, an exciting portion (50) for vibrating said objective lens along an optical axis of light passing through said objective lens at a preset amplitude, a position detector (19) for detecting the position of said objective lens that is moved in said optical axis direction, a light diaphragm (13/31) portion for passing a reflected light from said measurement subject, a light receiving portion (9/14) for receiving light passing through said light diaphragm portion, a displacement operation portion (16/42) for acquiring a detected position from said position detector at the moment when the light received amount of light received by said light receiving portion is maximum, and calculating the displacement on said measurement subject based on said detected position, a measuring area specifying portion for specifying a measuring area that

Art Unit: 2877

is an object of measurement on said measurement subject (figs. 3, 6 and 7), an objective lens scan portion (50) for scanning said objective lens along a plane orthogonal to said optical axis direction in said measuring area specified by a measuring area specifying portion (fig. 4), an objective lens movement detecting portion (19) for detecting the position of said objective lens that is moved along said orthogonal plane by said objective lens scan portion, an operation processing portion (42) for calculating a distribution of displacement amount within said measuring area, based on the positional information of said objective lens at plural measuring points within said measuring area, and the displacement amounts measured at said plural measuring points and an output portion for outputting the result of calculation by said operation processing portion (43) (figs. 3, 6 and 7)(col. 4, line 35-col. 5, line 1-5). The reference of Zanoni is silent regarding the scanning objective lens along a plane orthogonal to optical axis direction. Scanning objective lens perpendicular to optical axis direction is known in the art as evident by Boettner (fig. 1)(col. 3, line 60-col. 4, line 1-3)(col. 6, line 56-57). It would have been obvious to one having ordinary skill in the art at the time of invention to provide objective lens scan portion scanning objective lens along a plane orthogonal to optical axis direction for the purpose of specific area or volume containing a region of interest.

As to claim 9, Zanoni and Boettner disclose everything claimed, as applied to claim 8 above, in addition Zanoni discloses wherein said objective lens scan portion (50) scans said objective lens at a regular interval on a path or area specified on said measurement object, and said operation processing portion performs the arithmetical operation to display a profile of said measurement subject on said specified path or area by making continuous the displacement amount measured at each measuring point (fig. 4).

As to claim 10, Zanoni and Boettner disclose everything claimed, as applied to claim 8 above, in addition Zanoni discloses wherein said objective lens scan portion (50) scans said objective lens at a regular interval on a path or area specified on said measurement object, and said operation processing portion performs the average the displacement amount arithmetical operation to measured at each measuring point to obtain the displacement amount on said specified path or area (col. 1, line 62-65).

As to claim 11, Zanoni and Boettner disclose everything claimed, as applied to claim 8 above, in addition Zanoni discloses wherein said measuring area specifying portion sets up at least one of a scan width that is a range of moving said objective lens, a scan center that a

central position of movement, a scan period for periodically moving said objective lens, and a scan step that is a movement amount for each scan (col. 7, line 19-54).

As to claim 12, Zanoni and Boettner disclose everything claimed, as applied to claim above, in addition Zanoni discloses wherein said displacement gauge further comprises a collimator lens (5) for converting light emitted from said light emitting portion into parallel light to be incident on said objective lens, in which said objective lens is moved in the direction perpendicular to the optical axis of parallel light from said collimator lens by said objective lens scan portion (fig. 6).

As to claim 13, Zanoni and Boettner disclose everything claimed, as applied to claim above, in addition Zanoni discloses wherein said objective lens scan portion (50) moves said objective lens to be vibrated at a preset amplitude around a predetermined position (col. 2, line 4-18)(col. 2, line 58-65)(fig. 7).

As to claim 14, Zanoni and Boettner disclose everything claimed, as applied to claim above, in addition Zanoni discloses wherein said objective lens scan portion (50) moves said objective lens in a circular arc (figs. 3, 6 and 7)(col. 5, line 8- 15)(col. 5, line 45-51).

As to claim 15, Zanoni and Boettner disclose everything claimed, as applied to claim above, in addition Zanoni discloses wherein said objective lens scan portion (50) includes a servo motor for moving said objective lens in a circular arc around a predetermined rotation axis, and said objective lens movement detecting portion (19) includes a rotational angle sensor for detecting the rotational angle of said servo motor (figs. 3, 6 and 7)(col. 5, line 8-15)(col. 5, line 45-51).

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zanoni (3,847,485) in view of Boettner et al. (5,880,465), and further in view of Kudo et al. (5,836,869)

Claims 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over of Zanoni in view of Boettner and further in view of Kudo, as applied to claim 14. The combination of Zanoni and Boettner teaches of the features of claim 16, Zanoni reference teaches objective lens scan portion (50)(piezoelectric transducer, a servo-motor, or other device) that moves said objective lens around a predetermined rotation axis, and said objective lens movement detecting portion (19)(col. 5, line 8-15), however the reference of Zanoni and Boettner is silent regarding the type of the actuator as been a voice coil. The reference of Kudo teaches of the use of voice coils or

servo-motor (fig. 10). It would have been obvious to one having ordinary skill in the art at the time of invention to provide an objective lens scan portion that includes a voice coil for rotating said objective lens around a predetermined rotation axis for the purpose of inducing motion toward or away from the sample, further the use of voice coils or servo-motor would have been well known and a matter of design choice as evidenced by Zaroni (col. 5, line 8-15), therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to use an objective lens scan portion that includes a voice coil for rotating an objective lens around a predetermined rotation axis for the purpose of focusing a sample/test accurately.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zaroni and Boettner, as applied to claim above. The reference of Zaroni teaches of the features of claim 17, comprising objective lens scan portion (50) supporting objective lens (11)(fig. 3), however the reference of Zaroni and Boettner is silent regarding the type of the connection (e.g. cantilever). The use of cantilever to support/connect an objective lens is well known as evidenced by Ushida (4,596,444)(figs. 2, 3 and 4). It would have been obvious to one having ordinary skill in the art at the time of invention to use/provide objective lens scan portion that has a cantilever connected to objective lens for the purpose of supporting the objective lens.

As to claim 18, Zaroni and Boettner disclose everything claimed, as applied to claim above, in addition Zaroni discloses wherein said objective lens scan portion moves said objective lens linearly (figs. 3, 4, 6 and 7)(col. 5, line 49-51).

As to claim 19, Zaroni and Boettner disclose everything claimed, as applied to claim above, in addition Zaroni discloses wherein said displacement gauge further comprising an image pickup light receiving portion (9/14) disposed on an optical path of reflected light from said measurement subject, and an image pickup monitor (43)(fig. 7) as evidenced by Kudo et al. (5,836,869)(182/439) for forming image said measurement of subject, based on a light reception signal detected by said image pickup light receiving portion, and displaying said image, in which the timing of picking up the image displayed on said image pickup monitor takes place at the moment when the light received amount of said light receiving portion is maximum by exciting said objective lens (11) at a predetermined measuring point by said exciting portion (col. 4, line 68-col. 5, line 1-5).

Allowable Subject Matter

Claims 1 and 20 are allowable

As to claim 1, the prior art of record, taken alone or in combination, fails to disclose or render obvious an objective lens scan portion connected to said objective lens, said objective lens scan portion has a rotational axis, said objective lens scan portion moving said objective lens in a second direction orthogonal to said first direction around the rotational axis, in combination with the rest of the limitations of the claim. Claims 2-5 and 7 are allowable by virtue of their dependency.

As to claim 20, the prior art of record, taken alone or in combination, fails to disclose or render obvious a step of moving objective lens by an objective lens scan portion in a direction orthogonal to the optical axis direction and around a rotational axis of the objective lens scan portion to move the measuring point on measurement subject for which the displacement is calculated, in combination with the rest of the limitations of the claim.

Additional Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The references listed in the attached form PTO-892 teach of other prior art displacement gauge/ method for measuring a displacement that may anticipate or obviate the claims of the applicant's invention.

Response to Arguments

Applicant's arguments/remarks, see pages 13-27, filed 08 May 2006, with respect to the rejection(s) of claim(s) 1-5, 7 and 20 under 35 U.S.C. 102(b) and 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of claim amendment to claims 8-19.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Fax/Telephone Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Isiaka Akanbi whose telephone number is (571) 272-8658. The examiner can normally be reached on 8:00 a.m. - 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley Jr. can be reached on (571) 272-2059. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Isiaka Akanbi
December 20, 2006



Samuel A. Turner
Primary Examiner